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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/897,576	07/02/2001	Richard J. Markle	2000.071100	1249

23720 7590 07/21/2003

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EXAMINER

NGUYEN, SANG H

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 07/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Application No.

Applicant(s)

09 897,576

DIARKLE ET AL

**Office Action Summary**

Examiner

Art Unit

Sang H Nguyen

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 29 April 2003.
- 2a) ☐ This action is **FINAL**                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) 1-65 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-65 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \*   c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-949)
- 3) ☐ Information Disclosure Statements (PTO-1449) (Paper Nois.)
- 4) ☐ Interview Summary (PTO-413) (Paper Nois.)
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other

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## DETAILED ACTION

### *Response to Amendment*

1. The present Office action is made in response to Amendments filed on 04/16/03 made of record as Paper No.7.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 52-53 and 57-62 are rejected under 35 U.S.C. 102(b) as being anticipated by Jost et al (U.S. Patent No. 5,686,747).

Regarding claims 52-53 and 57-62: Jost et al discloses a test structure, comprising:

\* a plurality of lines (12,14,16 of figures 1-2) formed on a silicon semiconductor substrate (11 of figure 2); and

\* a plurality of contact openings (32,34 of figure 2) defined in the lines (12,14 of figure 2), wherein the plurality of lines (12,14,16 of figure 2) being defining in a first layer is an insulative layer and the insulative layer comprises at least one of silicon dioxide, silicon nitride, silicon oxynitride, and silicon rich oxide (col.3 lines 43-51). See figures 1-14.

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(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1-65 are rejected under 35 U.S.C. 102(a) as being anticipated by Jun et al (U.S. Patent No. 6,366,688).

Regarding claims 1-65: Lensing discloses a method and a metrology tool determining contact opening dimensions, comprising:

- \* a wafer (110 of figure 1) having a test structure (figures 15) comprising a plurality of contact openings is considered to be contact holes (153 of figures 19-20) defined in a horizontal and vertical mesh lines (150,152 of figures 19-20).

- \* a light source (102 of figure 1) for illuminating at least at least one portion of the contact holes (153 of figure 19) in the wafer (110 of figure 1);

- \* a detector (112 of figure 1) for detecting light reflected from the illuminated portion of the contact opening (153 of figure 19) of the wafer (110 of figure 1) for generating a reflection profile to a signal amplifier (114 of figure 1);

- \* a data processing unit (115 of figure 1) for comparing the generated reflection profile to a library considered to be threshold of reference reflection profiles, each reference reflection profile having an contact opening dimension metric, selected a reference reflection profile closest to generated reflection profile, and determining a dimension of the contact opening (153 of figure 19 of figure 4) based on the reflection profile (col.3 lines 54-67 and col.4 lines 1-9). See figures 1-32.

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*Claim Rejections - 35 USC § 103*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 54-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jost et al (U.S. Patent No. 5,686,747).

Regarding claims 54-56: Jost et al discloses all of features in claimed invention except for a second layer formed over the first layer and the lines being defined in the second layer. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a second layer considered to be an insulative layer of isolated word lines formed over the first layer considered to be a silicon semiconductor substrate (11 of figure 2), since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

*Conclusion*

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Forbes et al (6,465,289) discloses method of fabricating a semiconductor on insulator memory cell with buried word and body lines; Bergemont et al (6,362,023) discloses dielectric based anti fuse cell with polysilycon contact plug and method for its manufacture; or Dao

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(5,635,316) discloses layout methodology, mask set, and patterning method and phase-shifting lithography.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Sang Nguyen whose telephone number (703)308-6426. The examiner can normally be reached on Monday through Friday from 8:30 am to 5:00 pm.

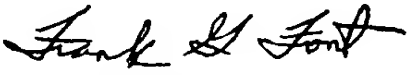
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Frank Font, can be reached on (703)308-4881. The fax phone number for the organization where this application or proceeding is assigned is (703)308-7722 or 7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

SN

Nguyen sn

Jul 10, 2003

  
Frank G. Font  
Supervisory Patent Examiner  
Art Unit 2877  
Technology Center 2800